

THE MELTING RATIO.

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Many foundrymen have gotten into the habit of talking high melting ratios to such an extent that the more inexperienced proprietors are led to think that their foremen are simply robbing them, when one to six or seven is the rule in their establishment. And yet a better ratio may be impossible to obtain when certain classes of work are to be gotten out properly. I do not believe in saving coke at the expense of castings, but this is just what many foundrymen are doing, and many more have done.

A few years ago I saw the efforts of the superintendent of a large Eastern foundry to melt at one to ten, with the natural failure that resulted for the particular class of work he had in hand. During two months of this trial, three steam cylinders weighing over 20 tons each, not to mention many tons of the smaller castings, were thrown out by the machine shop. All this work was lost because of dull iron. There were also many tons lost in the foundry which never passed the drop.

Now there is no doubt at all that iron can be melted at the ratio of one to ten, *for certain kinds of castings*, and when anyone speaks of melting iron thus, it would be well to pin him down to facts. To ask him whether the coke and iron was accurately weighed. What the height of his tuyeres is from the cupola bottom, the height of charging door, diameter of cupola, and blast pressure. What percentage of pig iron, scrap or steel goes in. Whether the pig and scrap was large or of normal sizes, whether coal was used with the coke, and the quality of each. Finally what was the class of work to be poured and the length of time necessary to accumulate enough metal to pour the pieces.

Information of this sort would be useful in making comparisons, even though conditions are seldom alike in any two foundries. One establishment may have a cupola of an improved type while the other would be struggling along with the old time home-made